

**REMARKS**

Claims 1-9 are all the claims pending in the present application. With this Amendment, Applicant amends claims 1 and 3-9. No new matter is added.<sup>1</sup>

**I. Formal Matters**

Applicant thanks the Examiner for indicating his approval of the drawings filed December 24, 2004.

Applicant thanks the Examiner for withdrawing the objection to the title of the invention.

**II. Claim Rejections under 35 U.S.C. § 102(b) over Tuutijarvi**

Claims 1, 2, 7, and 9 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Tuutijarvi et al. (U.S. Patent No. 5,870,675; hereinafter “Tuutijarvi”). In order for the Examiner to maintain a rejection under 35 U.S.C. § 102(b), “each and every element … set forth in the claim” “must be found … in a single prior art reference.” MPEP § 2131. Applicant respectfully submits that Tuutijarvi does not disclose, teach, or suggest each and every element of claims 1, 2, 7, and 9.

**Claim 1**

Regarding claim 1, Tuutijarvi fails to disclose, teach or suggest at least a mobile phone system comprising, *inter alia*, a plurality of base stations, wherein each of the plurality of base stations includes circuitry to transmit a unidirectional logical control channel signal in a designated transmission time slot of a frame, the designated transmission time slot being the

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<sup>1</sup> Applicant submits that support for the amendments to the claims is found at least in Figures 6A-6D, and 7A-7B of the specification.

same for each of the plurality of base stations, as required by claim 1. In the Office Action, the Examiner maintains that column 2, lines 32-67, column 3, lines 1-10 and FIG. 4b of Tuutijarvi teaches the features of claim 1 because FIG. 4b of Tuutijarvi allegedly discloses that each base station in the mobile system of Tuutijarvi transmits a logical control channel signal, namely “slow associated control channel SACCH,” in “a second transmitting time slot” (which the Examiner alleges corresponds to a designated transmission time slot as recited in claim 1) “of a frame.” (See pgs. 2-3 of the Office Action). Moreover, the Examiner alleges that FIG. 4b of Tuutijarvi teaches a “designed transmission time slot being the same for each of the plurality of base [stations]” because FIG. 4b allegedly discloses “a second time slot at the transmitting [base station] side” which is “defined by [the] US TDMA standard [and] thus each [base station]” in the mobile system of Tuutijarvi “uses the same slot for control channel.” (See pg. 3 of the Office Action). Applicant submits that Tuutijarvi does not teach or suggest all of the features of claim 1 for at least the following reasons.

First, Tuutijarvi, does not disclose or suggest wherein each of the plurality of base stations includes circuitry to transmit a unidirectional logical control channel signal, as claimed. In contrast to the requirements of claim 1, FIG. 4a of Tuutijarvi shows the structure of a 6.67 ms transmission time slot (TX) “sent by [a] mobile phone to a base station of the mobile system depicted in Fig. 1 of Tuutijarvi. (See Col. 2, lines 66-67) (emphasis added). The 6.67 ms transmission time slot (TX) includes a slow associated control channel (SAACH) that was transmitted by the mobile phone to a base station. (See FIG. 4a of Tuutijarvi). Column 3, lines 1-2 of Tuutijarvi describes that FIG. 4b shows the structure of a 6.67 ms reception time slot (RX) “sent to the mobile phone by a base station” in the mobile system of Tuutijarvi. As can be seen

in FIG. 4b of Tuutijarvi, the 6.67 ms reception time slot (RX) contains SACCH which was transmitted from a base station to the mobile phone. In view of the above, FIGS. 4a and 4b of Tuutijarvi clearly shows that SACCH is a **bi-directional** control channel signal that is transmitted from a base station to a mobile phone or is transmitted from a mobile phone to a base station. Given that SACCH is a **bi-directional** control channel signal, as demonstrated by Tuutijarvi, Tuutijarvi does not disclose and is incapable of suggesting wherein each of the plurality of base stations includes circuitry to transmit a unidirectional logical control signal, as required by claim 1.

Second, Applicant respectfully submits that Tuutijarvi fails to teach or suggest wherein each of the plurality of base stations includes circuitry to transmit a unidirectional logical control channel signal in a designated transmission time slot of a frame, the designated transmission time slot being the same for each of the plurality of base stations, as claimed. Even assuming *arguendo* that FIG. 4b of Tuutijarvi shows that a base station transmits a bi-directional signal such as SACCH, in a designated transmission time slot of a frame, there is no disclosure or suggestion in Tuutijarvi that the designated transmission time slot is the same for each base station disclosed therein, as required by claim 1. As noted above, and explained in the previous Amendment filed on December 27, 2004, FIG. 4b of Tuutijarvi merely “shows the structure of [a single] 6.67 ms [reception] RX time slot sent to [a] mobile phone by a [single]<sup>2</sup> base station.” (See Col. 2, line 67 & Col. 3, lines 1-2) (emphasis added). Since FIG. 4b of Tuutijarvi displays

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<sup>2</sup> See Col. 6, lines 16-18 of Tuutijarvi explaining that “FIG. 4b shows the structure of a [single] time slot received by a mobile phone.” (emphasis added).

the structure of a single 6.67 ms reception RX time slot, FIG. 4b of Tuutijarvi cannot disclose a TDMA frame as contended by the Examiner. (See lines 1-2 and 4 on pg. 3 of the Office Action where the Examiner alleges that FIG. 4b shows a “second transmitting time slot ...of a TDMA frame”). Rather, the 6.67 ms reception RX time slot shown in FIG. 4b of Tuutijarvi is merely a single time slot of a full-rate TDMA frame or a half-rate TDMA frame shown in FIGS. 2a and 2b<sup>3</sup> of Tuutijarvi.<sup>4</sup> Col. 2, lines 52-65. At best, FIG. 4b of Tuutijarvi simply teaches that a single base station disclosed therein transmits a bi-directional signal, such as SACCH, along with other speech information (such as SYNC and DATA for e.g.) in a time slot. There simply is no disclosure in FIG. 4b of Tuutijarvi (or any portion of Tuutijarvi) and the Examiner cites to none regarding the manner in which each base station (shown in FIG. 1 of Tuutijarvi) transmits signals. Nevertheless, the Examiner takes the position that each base station taught by Tuutijarvi transmits a control channel signal i.e., SACCH in the same time slot because the time slots of Tuutijarvi are defined by the US TDMA standard. Applicant submits that the US TDMA standard does not necessarily require that each base station in a mobile system transmits a control channel signal such as SACCH from the same time slot as contended by the Examiner.

As described on page 3, line 25 and page 4, lines 1-3 of the specification, base stations in conventional mobile phone systems using the US TDMA (also known as Interim Standard (IS)-

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<sup>3</sup> See Col. 1, lines 29-31 of Tuutijarvi noting that “FIGS. 2a and 2b show the structure of the transmission and reception frames used in the system.”

<sup>4</sup> See Col. 2, lines 52-54 of Tuutijarvi describing that “the length of a TDMA frame ... is 40 ms, and *the length of each time slot is 6.67 ms.*” (emphasis added).

136)<sup>5</sup> standard may transmit a logical control channel signal in any of a number of transmission time slots such as “transmission slots 1 to 4.” In other words, in the conventional mobile phone systems a radio base station such as B 102 may “transmit a logical control channel signal by using a transmission slot 4.” (See pg. 4, lines 6-8 of the specification) (emphasis added). Similarly, a radio base station C 103 may transmit “a logical control channel signal by using a transmission slot 1” and a radio base station D 104 may transmit “a logical control channel signal by using a transmission slot 2.” (See pg. 4, lines 8-11 of the specification) (emphasis added). In view of the foregoing, radio base stations using the US TDMA standard may transmit a logical control channel signal in different time slots. Clearly then, the US TDMA standard does not necessarily require that each base station in a mobile system transmits a control channel signal in the same time slot as alleged by the Examiner.

Given that Tuutijarvi is silent regarding the manner in which each of the base stations disclosed therein transmit signals and since the US TDMA standard does not require that each base station in a mobile system transmits a unidirectional logical control channel signal in the same time slot, Tuutijarvi does not disclose and is incapable of suggesting a mobile phone system, comprising *inter alia*, a plurality of base stations, wherein each of the plurality of base stations includes circuitry to transmit a unidirectional logical control channel signal in a designated transmission time slot of a frame, the designated transmission time slot being the same for each of the plurality of base stations, as required by claim 1.

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<sup>5</sup> See pg. 1, lines 14-24 of the specification explaining that conventional mobile phone systems use “IS-136 (i.e., Interim Standard-136)” which is US TDMA; See also the attached Althos On-Line Communications Dictionary definition of IS-136.

For *at least* the reasons set forth above, Tuutijarvi fails to teach or suggest all of the features of claim 1. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the § 102(b) rejection of claim 1.

**Claim 2**

Given that claim 2 depends from claim 1, Applicant submits that claim 2 is patentable for at least the reasons submitted for claim 1. Applicant therefore respectfully requests the Examiner to withdraw the § 102(b) rejection of claim 2.

**Claim 7**

Since claim 7 contains features that are similar to the features recited in claim 1, Applicant submits that claim 7 is patentable for reasons analogous to those submitted for claim 1. To be precise, Applicant submits that Tuutijarvi fails to disclose, teach, or suggest at least a handover method for a mobile phone system, comprising, *inter alia*, transmitting a unidirectional logical control channel signal from each of a plurality of base stations in a designated transmission time slot of a frame, the designated transmission time slot being the same for each of the plurality of base stations, as required by claim 7. Applicant therefore respectfully requests the Examiner to withdraw the § 102(b) rejection of claim 7.

**Claim 9**

Since claim 9 contains features that are similar to the features recited in claim 1, Applicant submits that claim 9 is patentable for reasons analogous to those submitted for claim 1. To be precise, Applicant submits that Tuutijarvi fails to disclose, teach, or suggest at least a mobile phone system comprising, *inter alia*, means for transmitting a unidirectional logical control channel signal from each of a plurality of base stations in a designated transmission time

slot of a frame, the designated transmission time slot being the same for each of the plurality of base stations, as required by claim 9. Applicant therefore respectfully requests the Examiner to withdraw the § 102(b) rejection of claim 9.

### **III. Claim Rejections under 35 U.S.C. § 103(a) over Tuutijarvi in view of Yahata**

Claims 3-5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tuutijarvi in view of Yahata et al. (U.S. Patent No. 6,480,483; hereinafter “Yahata”). Applicant respectfully traverses this rejection for the following reasons.

#### **Claim 3**

Since claim 3 depends from claim 1, Applicant submits that claim 3 is patentable for at least the reasons submitted for claim 1 and because Yahata fails to make up for the deficiencies of Tuutijarvi. Further, Applicant submits that claim 3 is independently patentable given that the cited prior art fails to teach, suggest, or provide motivation for a mobile phone system, wherein the unidirectional logical control channel signal is successively transmitted at a fixed period timing from each of said plurality of base stations, as required by claim 3.

In rejecting claim 3, the Examiner posits that Tuutijarvi teaches the features of claim 3 because Tuutijarvi allegedly discloses that “each base station” disclosed therein “[transmits] control channels to the mobile station.” (See paragraph 7 on pg. 5 of the Office Action).

As discussed above with respect to claim 1, Tuutijarvi fails to disclose a unidirectional logical control channel signal, as required by claim 3, and Yahata does not make up for this deficiency of Tuutijarvi. Moreover, even assuming *arguendo* that Tuutijarvi teaches that each base station in the mobile system disclosed therein transmits “control channels,” (as contended by the Examiner) Applicant submits that the Examiner has not addressed how Tuutijarvi teaches

that the “control channels” are successively transmitted from each base station, as required by claim 3. As explained in the previous Amendment filed December 27, 2004, there simply is no disclosure in Tuutijarvi and the Examiner cites to none suggesting the manner in which the base stations disclosed therein transmit signals.

Similarly, there is no disclosure in Yahata, and the Examiner cites to none suggesting a unidirectional logical control channel signal that is successively transmitted from each of said plurality of base stations, as required by claim 3.

Accordingly, neither Tuutijarvi, Yahata, nor any combination thereof teaches, suggests or provides the motivation for a mobile phone system, wherein the unidirectional logical control channel signal is successively transmitted at a fixed period timing from each of said plurality of base stations, as claimed. Since neither Tuutijarvi, Yahata nor any combination thereof teaches all of the limitations of claim 3, Applicant respectfully requests the Examiner to reconsider and withdraw the § 103(a) rejection of claim 3 for this additional reason.

#### **Claim 4**

Since claim 4 depends from claim 1, Applicant submits that claim 4 is patentable for at least the reasons submitted for claim 1 and because Yahata fails to make up for the deficiencies of Tuutijarvi. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the § 103(a) rejection of claim 4.

#### **Claim 5**

Since claim 5 depends from claims 1 and 3, Applicant submits that claim 5 is patentable for at least the reasons submitted for claims 1 and 3 and because Yahata fails to make up for the

deficiencies of Tuutijarvi. Applicant therefore respectfully requests the Examiner to reconsider and withdraw the § 103(a) rejection of claim 4.

**IV. Claim Rejections under 35 U.S.C. § 103(a) over Tuutijarvi in view of Hammer**

The Examiner rejected claims 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Tuutijarvi in view of Hammer et al. (U.S. Patent No. 4,872,204; hereinafter “Hammer”). Applicant respectfully traverses this rejection for at least the following reasons.

**Claims 6 & 8**

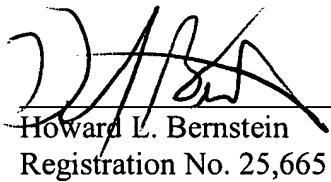
Since claims 6 and 8 depend from claim 1, Applicant submits that claims 6 and 8 are patentable for at least the reasons submitted for claim 1 and because Hammer fails to make up for the deficiencies of Tuutijarvi. Applicant therefore respectfully requests the Examiner to withdraw the § 103(a) rejection of claims 6 and 8.

**V. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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